

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference G5408 PCT		FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/EP2004/004074		International filing date (day/month/year) 16.04.2004	Priority date (day/month/year) 17.04.2003	
International Patent Classification (IPC) or national classification and IPC B01J37/02, B01J35/04, B05D7/22				
Applicant UMICORE AG & CO. KG				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 1 sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 17.02.2005		Date of completion of this report 06.09.2005		
Name and mailing address of the International preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer Veefkind, V Telephone No. +31 70 340-1017		



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/004074

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-13 as originally filed

Claims, Numbers

2-11 as originally filed

1 received on 17.02.2005 with letter of 16.02.2005

Drawings, Sheets

1/2, 2/2 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/004074

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	6-10
	No: Claims	1-5,11
Inventive step (IS)	Yes: Claims	
	No: Claims	1-11
Industrial applicability (IA)	Yes: Claims	1-11
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/EP2004/004074

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following documents:

- D1: EP-A-1 273 344 (OMG AG & CO KG) 8 January 2003 (2003-01-08)
- D2: US-A-3 959 520 (HOYER WILLIAM A ET AL) 25 May 1976 (1976-05-25)
- D3: US-A-4 208 454 (LEAL RICHARD A ET AL) 17 June 1980 (1980-06-17)
- D4: KOLB W B ET AL: "THE INS AND OUTS OF COATING MONOLITHIC STRUCTURES. IMPROVE YOUR UNDERSTANDING OF COATING CATALYTIC SUPPORT MATERIALS" CHEMICAL ENGINEERING PROGRESS, AMERICAN INSTITUTE OF CHEMICAL ENGINEERS. NEW YORK, US, vol. 89, no. 2, 1 February 1993 (1993-02-01), pages 61-67, XP000343928 ISSN: 0360-7275
- D5: DE 198 22 505 A (VOITH SULZER PAPIERTECH PATENT) 25 November 1999 (1999-11-25)

1.1 It is remarked that due to its formulation it is not evident from claim 1 of the present application that the "determination" in step (b) is performed every time for each individual body that is being coated. Rather this step may be performed only once and then applied to each body being coated. (Also note that the order of steps in claim 1 is not fixed)

As long as this distinction cannot be made based on the wording of claim 1, the subject-matter of claims 1-5 cannot be considered as being new, for the following reasons:

D1 (cited in the application) discloses a method for coating open-pored bodies (including intrinsically a variation in applied wet coating quantity) by (a) coating the body (channels) with a quantity of coating which is always larger than the target quantity and (c) reducing the difference between actual quantity and target quantity by removing (by suction or blowing out) still wet coating suspension (see paragraphs [0024] and [0030]). The power and duration of the suction or blowing out processes (removal of suspension) until the target uptake is achieved can (b) be determined by a person skilled in the art in a few preliminary trials (see last sentence of paragraph [0042]).

Thus, prior art document D1 makes available all process steps which are the subject-matter of independent claim 1, as well as claims 3, 4, and 5 (for the first few bodies after the preliminary trials). D1 also discloses drying and calcination (paragraph [0031]). Claims

1-5, therefore, are not novel (Article 33(2) PCT) over D1.

1.2 The use of weighing for determining the quantity of coating is one of the few methods for determining this quantity that the skilled person would choose from without applying inventive skill. Claim 6, therefore, lacks inventive step over D1.

The subject-matter of claim 7 appears to involve nothing more than routine trial-and-error to achieve the desired quantity, and can, therefore, not be regarded to involve an inventive step.

The subject-matter of claim 8 (apart from not being clear, see point VIII below) appears to be at least not inventive, since its effects are not clear and because D1 discloses suction from two sides.

Thus, the subject-matter of claims 6-8 lacks an inventive step (Article 33(3) PCT).

1.3 Claims 9 and 10 suffer from a substantial lack of clarity (see point VIII, below). Nevertheless they appear to be novel (Article 33(2) PCT).

However, they appear not to be inventive (Article 33(3) PCT). Every process has a certain variation from a desired value, and the capacity for optimization of a process to reach a desired target inevitably has a certain precision. It is generally known that it makes no sense to try to reach a target value if the precision of the optimization steps is less than the difference between actual value and target value (one cannot optimize endlessly) and stopping after reaching a threshold (i.e., accepting a certain 'bandwidth' around the target value) is common practice in optimization. Therefore, the subject-matter of claims 9 and 10 does not involve an inventive step.

1.4 When wishing to perform the process of claim 6 (lacking inventive step), one will as a minimum, intrinsically need an apparatus with the features of claim 11. Independent claim 11 is therefore considered as not inventive over D1 (Article 33(3) PCT).

2. Independent Claim 11 is also considered to lack novelty over D2 and D3 (Article 33(2) PCT)(see passages cited in the Search Report). The systems described therein comprise coating, (re-) suction, and weighing stations and appear not unsuitable for performing the desired process.

Re Item VIII

Certain observations on the international application

1. Claims 9 and 10 are depending on claim 1. They should, therefore, contain all features of claim 1. However, this is not the case since in claims 9 and 10 step (c) may not be performed, depending on circumstances.

The combination of claims 1, 9 and 10, i.e., the indication that step (c) may also be omitted in certain circumstances, throws doubt upon the intended limitations in independent claim 1. As a result the claims severely lack clarity (Article 6 PCT).

2. Claim 8 mentions a 'second end' of the body without claim 7 or claim 1 referring at least to a 'first end', as a result it is not clear what this 'second end' refers to. Claim 8, therefore, lacks clarity (Article 6 PCT).

3. Claim 1 is unclear (Article 6 PCT) because of the term "re-suction". This term would imply suction had already taken place before, but such earlier suction cannot be found in claim 1.

11. 6. Feb. 2005

Claims

1. A method for coating open-pored bodies with at least one coating suspension including, in particular, solids and solutes in a liquid medium, in a quantity in wet state which is to correspond to at least a required target quantity, wherein the coating operation includes a variation in the applied wet coating quantity from one body to the other, the method being characterized by the steps of:
 - (a) coating a body with an actual quantity of the coating suspension, which is always larger than the required target quantity taking the variation of the coating operation into account,
 - (b) determining the difference between the actual quantity and the required target quantity, and
 - (c) reducing the difference between actual quantity and target quantity by removing still wet coating suspension *by re-suction*.
2. The method according to claim 1, wherein steps (a) to (c) are followed by drying and calcination of the applied coating suspension.
3. The method according to claim 2, wherein step (c) includes reducing the difference between actual quantity and target quantity by re-suction from one end of the body using an intensity and/or duration matched with the magnitude of the differential quantity.
4. The method according to claim 3, wherein intensity and/or duration of re-suction are selected from tables of values for the measured actual quantity established in preliminary tests.